Applicant: Alexandre Glazounov Serial No.: Not Yet Assigned

: Herewith Filed

Page : 3

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Attorney's Docket No.: 14219-085US1

Client's Ref.: P2002,0812USN

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1 to 9. (Cancelled)

10. (New) A piezoelectric transformer comprising: ceramic layers comprising a hard piezoelectric material; and an electrode layer comprising copper, the electrode layer being disposed between the ceramic layers.

- 11. (New) The piezoelectric transformer of claim 10, wherein the hard piezoelectric material comprises ceramic green film containing a binder that is thermohydrolytically decomposable.
- 12. (New) The piezoelectric transformer of claim 11, wherein the binder comprises a polyurethane dispersion.
- 13. (New) The piezoelectric transformer of claim 10, wherein the hard piezoelectric material includes a general composition of Pb(Zr_xTi_{1-x})O₃, wherein part of Zr or Ti is replaced by a low-valence cation having an oxidation level 1+ or 2+.

Applicant: Alexandre Glazounov Attorney's Docket No.: 14219-085US1 Client's Ref.: P2002,0812USN

Serial No.: Not Yet Assigned

: Herewith Filed

Page

14. (New) The piezoelectric transformer of claim 10, wherein the hard piezoelectric material includes a general composition of Pb(Zr_xTi_{1-x})O₃, wherein part of Pb is replaced by a low-valence cation having an oxidation level 1+.

- 15. (New) The piezoelectric transformer of claim 10, wherein the hard piezoelectric material has a general composition of Pb[$(Zr_xTi_{1-x})_{1-y}(Mn_{1/3}Nb_{2/3})_y$]O₃.
- 16. (New) The piezoelectric transformer of claim 10, wherein the electrode layer comprises a screen-printed electrode layer.
- 17. (New) A method of producing a piezoelectric transformer comprised of (i) ceramic layers comprising a hard piezoelectric material, and (ii) an electrode layer comprising copper, the electrode layer being disposed between the ceramic layers, wherein the method comprises:

sintering the hard piezoelectric ceramic in an inert atmosphere.

- 18. (New) The method of claim 17, wherein the ceramic is sintered at a temperature that is below the melting point of copper.
- 19. (New) The method of claim 17, wherein the hard piezoelectric material comprises ceramic green film containing a binder that is thermohydrolytically

Applicant: Alexandre Glazounov Attorney's Docket No.: 14219-085US1 Client's Ref.: P2002,0812USN

Serial No.: Not Yet Assigned

Filed : Herewith

Page : 5

decomposable.

20. (New) The method of claim 19, wherein the binder comprises a polyurethane dispersion.

- 21. (New) The method of claim 17, wherein the hard piezoelectric material has a general composition of Pb(Zr_xTi_{1-x})O₃, wherein part of Zr or Ti is replaced by a lowvalence cation having an oxidation level 1+ or 2+.
- 22. (New) The method of claim 17, wherein the hard piezoelectric material has a general composition of Pb(Zr_xTi_{1-x})O₃, wherein part of Pb is replaced by a low-valence cation having an oxidation level 1+.
- 23. (New) The method of claim 17, wherein the hard piezoelectric material has a general composition of Pb[$(Zr_xTi_{1-x})_{1-y}(Mn_{1/3}Nb_{2/3})_y$]O₃.
- 24. (New) The method of claim 17, wherein the electrode layer comprises a screen-printed electrode layer.
- 25. (New) The method of claim 17, wherein sintering occurs at a temperature of about 1000°C.

 $Applicant \ : \ Alexandre \ Glazounov$

Serial No.: Not Yet Assigned

Filed : Herewith

Page : 0

26. (New) The method of claim 17, wherein the electrode layer contains no precious metal.

27. (New) An AC/DC converter comprising:

a piezoelectric transformer comprising:

ceramic layers comprising a hard piezoelectric material, the hard piezoelectric material having a general composition of $Pb[(Zr_xTi_{1-x})_{1-y}(Mn_{1/3}Nb_{2/3})_y]O_3$; and an electrode layer comprising copper, the electrode layer being disposed between the ceramic layers;

Attorney's Docket No.: 14219-085US1

Client's Ref.: P2002,0812USN

wherein the electrode layer does not include substantial amounts of silver, palladium, or platinum.

- 28. (New) The AC/DC converter of claim 27, further comprising multiple electrode layers, each of the multiple electrode layers being between ceramic layers, each of the multiple electrode layers comprising copper and not including substantial amounts of silver, palladium, or platinum.
- 29. (New) The AC/DC converter of claim 27, wherein the hard piezoelectric material has a general composition of Pb[$(Zr_xTi_{1-x})_{1-y}(Mn_{1/3}Nb_{2/3})_y$]O₃.
- 30. (New) The AC/DC converter of claim 27, wherein the electrode layer comprises a screen-printed electrode layer.